USING THE EXTECH 4500T PRINTER

Unpacking the Printer:

The S4500THS portable printer is a full featured portable receipt printer designed for varied job environments including field service, field sales, hospitality and restaurants, ticketing and many others where point of service receipts are required. The package contains:

- printer:
- battery cartridge,
- AC input, DC output wall mounted charger (may be USA, European or UK style plug) for charging the battery inside the printer
- roll of paper supply (already loaded in the printer).

Both cabled and wireless communication is possible.
To do a self test of the printer please hold the FEED button and while holding it down press the POWER button.

IrDA Communication

The 4500THS printer comes with IrDA as a standard feature. For IrDA mode to work, Dip Switch #1 must be in the <ON> position. The printer can be powered up by pressing the power <On/Off> switch. If no IrDA connection is made, the printer will automatically power down to a lower power level to conserve battery life. It will remain in a "sleep" mode until an IrDA connection is made, at which time the printer will "wake" up and print the requested data . Pressing the power switch again will turn the printer <OFF>. The table below shows the required printer settings for IrDA mode. In order for the printer to be in IrDA mode dip switch # 1 has to be On.

Dip Switch	Function	Switch #	Switch #
1	**Communication Interface**	**SW1**	
	IrDA	On	

Table C.3 – IrDA Mode

802.11b option

If your printer has the 802.11b module in it then you should make sure that before you start communicating via 802.11b Dip Switches # 1 and 2 are turned ON. The third LED on the printer will turn AMBER which indicates that you are in 802.11b mode. If you wish to go back to RS 232 mode just switch all Dip Switches OFF. The factory default 802.11b module settings are as follows:

Default Set up of the DPAC 802.11b modules in the 4500 printers

1) IP address:192.168.1.96
2) DHCP mode is not enabled
3) Ad - Hoc mode is enabled/ Infrastructure mode is disabled
4) SSID is NETGEAR
5) Tunnel port = 23 (If you want to send data to the 802.11b module use this port number)
6) Telnet port = 8023 (If you need to send commands to the 802.11b module use this port number)
7) Bit Rate is set to 115200

Please refer to the 802.11b kit on this CD for further information on how to communicate via 802.11b. Use the Extech_MCR_DEMO on this CD to communicate with the printer if you are using a PocketPC device and the PrinterCE_NETCF demo if you are using Ce.Net device. Currently though the Ce.Net demo does not support 802.11 b printing and can be used with BT only. If you need to use a demo which supports 802.11b printing from a Ce.Net device you can download one from www.fieldsoftware.com

BT Option

If your printer has a BT module then make sure that Dip Switch # 2 is ON. The POWER LED will turn BLUE indicating that you are in BT mode. IF you wish to go back to RS 232 mode turn all Dip switches OFF.
The POWER LED will start blinking GREEN indicating that you are now in RS 232 mode. As soon as you connect a device to the printer thought through the Serial Port the green light will turn steady Green indicating that there is a connection. Use the Extech_MCR_Demo on this CD to communicate with the printer. Check your device's BT manager to find out which comm. port is dedicated to the BT. Then use that comm. Port in the application in order to connect to the printer's BT module. The baud rate should be 115,000 and the stop bits should be set to 2. Select the NO HANDSHAKING option if

offered. If you will be sending large files no matter in which mode you are communicating then the Hand shaking should be set to HARDWARE.

Three Track magnetic Card Reader Option

A three track **M**agnetic **C**ard **R**eader is available on the Extech 4500THS model printers. The MC reader is designed to read magnetically encoded data from cards conforming to ANSI/ISO 7810, 7811 standards.
The MC reader converts the F2F encoded signals on the magnetic card, to ISO7811 compatible ASCII format and transmit the information to the host computer or a terminal.
The MC reader can read one, two or three tracks simultaneously and bi-directionally.
Set of printer ESC software commands are supported in order to provide the following operating features:

- Select the MC reader.
- Set the auto time-out software timer
- Report MCR Read errors
- Report MC reader status.

Card Specifications

The table below summarizes the format of the data stored on each magnetic track.

Track Position	***Track 1 ISO1 (IATA)***	***Track2 ISO2 (ABA)***	***Track3 ISO3(MINTS)***
Recording Density	***210 BPI***	***75 BPI***	***210 BPI***
Recording Capacity	***79 characters***	***40 characters***	***107 characters***
Number of data bits	***7***	***5***	***7***
Card Thickness	***.76 mm +/- 0.08 mm***		

Card Specifications

Magnetic Card Read command strings

Six Commands strings are provided, to read the magnetic cards. These commands are summarized in the tables below. The general syntax for commands are as follows:
`

Command String – General Syntax	Esc <'M'> <'n'> <'n'> <' Track # '>CR
Command String – Example	Esc <'M'> <'9'> <'9'> '6' CR

Magnetic Card Read Command Strings – general form

- The ESC-M command turns on the power to the MC Reader
- The next two bytes, **<*nn*>** are used to set the MC reader's timer. "01" through "99" are valid timer settings and "00" disables the timer.
- The printer aborts and transmits the time-out error message, if the operator fails to swipe a card within the time period set by the host application.
- On timeout printer aborts the swipe process, transmits timeout error message and turns off the <READING> LED. The timeout feature works best on power up. If used after that it may not cause the LED to turn OFF. Future Firmware releases will eliminate this.
- A good magnetic card swipe automatically terminates the read process.

Magnetic Card Command String	***Description***
ESC – M - nn - 1 – CR (CR = Enter)	Read Track1 only
ESC – M - nn - 2 – CR	Read Track2 only
ESC – M - nn - 3 – CR	Read Track3 only
ESC – M - nn - 4 – CR	Read Track1 and Track2 simultaneously
ESC – M - nn - 5 – CR	Read Track2 and Track3 simultaneously
ESC – M - nn - 6 – CR	Read Tracks 1,2 and 3 simultaneously
ESC – C	Cancel MC Read process
nn = ASCII "01" through "99" seconds nn = "00" disables the MC reader timer	

Magnetic Card Read Command Strings - Details

Magnetic Card Data Output Format

The track data retrieved from a magnetic card is transmitted to the host in ISO7811 ASCII format as summarized in the table below. The first four characters ("%/1/") flag the track number, the track data follows the flag string, terminated with '?'-CR-LF. '%;+' are the track start sentinel characters, While '?' is the end of track sentinel character. If no data is available for a track that data field will be empty. If an Error is encountered on any track a single 'E' will be the output for that tracks data field.

Track1			*Track 2*			*Track 3*		
%/1/	Data		;/2/	Data	?CRLF	+/3/	Data	?CRLF

ISO 7811 ASCII Format

<u>Magnetic Card Read Error Messages</u>

The characters <%> and <E> preface all error messages. Following these two characters is a comma, the error number in ASCII (01 through 99), another comma, English description of the error encountered and finally CR-LF terminating the <Error Message> string. The syntax is as follows:

Error Message (General Form)	nn , Error text in ASCII, <CR> <LF>

Error Message – General Form

Where *nn* is error number encountered.
The printer may transmit Four (4) types of Read Error messages. The following messages terminated with
CR-LF are returned by the firmware:

Error #	***Error Message Transmitted***
05	Time-out Expired
07	Invalid Track Number
08	Unsupported Track Selected
09	Cancel Request

Error Message – Specific Examples

Note: The Invalid Track number message is not implemented on version 0.09. Future releases will implement this message the timeout message also needs to be modified to work all the time since right now it works only in case this is the first command send on power up.

Interfacing to the Magnetic Card Reader

This section details the software steps required to access the MC reader from a computer or a terminal. The *Host Selects the printer* by activating the RTS input line or sending wake-up characters to the printer. The *Printer Sends the XON* command to the host to indicate that it is ready to receive data from host. Once XON is received the *host sends ASCII serial command string* to enable the magnetic card reader (e.g. Esc-m004- cr). The printer turns on the GREEN <**READY**> LED.

Note: On version 0.9 if communication is done in 802.11b mode and the Esc m command is sent to the printer the Green LED and the error LED does not turn on but the MCR processing is still working as usual. Once the operator swipes the magnetic card, the *printer transmits in ASCII format* the tracks information found on the magnetic card. A good read automatically turns off the MC reader and the <**READY>** LED. The **<READY>** LED illuminates RED if an error is encountered, while reading the magnetic card. ON version 0.8 the RED led will not illuminate on a bad read but the MCR is still functioning as usual. Printer transmits timeout error message if the operator fails to swipe a card in the time period set by the host application.

Bit Dot Addressable Graphic Commands

The Extech 4500THS printer uses a single line thermal head, which has 832 heating elements pitched at 0.125 mm. The total print width is 104 mm. The 8-bit graphic commands enable control of each one of the 832 heating elements and advancing of the paper by increments of 0.125 mm.

To select the 8-bit graphic mode the user application must issue the ESC-V command, next the host application sends two bytes to indicate the number of the graphic lines desired, followed with a packet of 104 bytes for each graphic line. The printer prints the graphic line and advances to the next line automatically.

Bit Dot addressable Graphic Commands

The following table displays the 8-bit dot addressable graphic commands and the printer actions. It also illustrates the Commands with an example. Please note that characters <> ‘’ and ‘-‘ are not part of the command string.

Command String	*Printer Action*
Esc-'V'-n1-n2	8-bit Graphic mode is selected.<n1> and <n2> is a 16 bit integer indicating the number of graphic lines to be received. Valid Graphic character sets are from 0x00 to 0xFF Hex using bits 0-7.
Esc-'J'-n	Performs <n*0.125mm> feed.
Esc-V-0x01-0x00 104 bytes of data	This code prints a single line of graphic.

8-bit Dot addressable Graphic Commands

Dip Switch Summary Table

Dip Switch	**Function**	**Switch #**	**Switch #**	**Switch #**	**Switch #**
1 & 2 & 6 & 7	Communication Interface	SW 1	SW 2		
	RS232	OFF	OFF		
	IrDA	ON	OFF		
	Bluetooth	OFF	ON		
	802.11b	ON	ON		
3 & 4 & 5	Baud Rate	SW 3	SW 4	SW 5	
	115200	OFF	OFF	OFF	
	57600	ON	OFF	OFF	
	38400	OFF	ON	OFF	
	19200	ON	ON	OFF	
	14400	OFF	OFF	ON	
	9600	ON	OFF	ON	
	2400	OFF	ON	ON	
	1200	ON	ON	ON	
Power LED Status Indication:					
ALL Dip Switches OFF --- Blinking GREEN - Serial RS232 Mode					
Dip Switch 2 ON --- Steady BLUE - Bluetooth Mode					
Dip Switch 1 & 2 ON --- Steady ORANGE - 802.11b Mode					

Graphic Logos

The *Graphic Logo* feature enables the storage of formatted Bitmap file in nonvolatile memory. Upon receipt of a *Graphic Logo* print command, the *Graphic Logo* data is sent to the printer. The feature enables printing of a stored graphic image as part of a receipt.Right now downloading of graphic logos to the 4500THS is not supported. In the near future full implementation of this command will be available.

Printer	***Number of Logos***	***Bytes per logo***	***Dot lines per logo***	***Dots per line***
4500T/THS	2 (FLASH) n =(0..1)	31,200	300	832

Graphic Logo Commands

Print Graphic Logo: **ESC - L - g – n**
For valid n value check the table above.

PRINTER FONTS

Printer Font Commands to select different character width

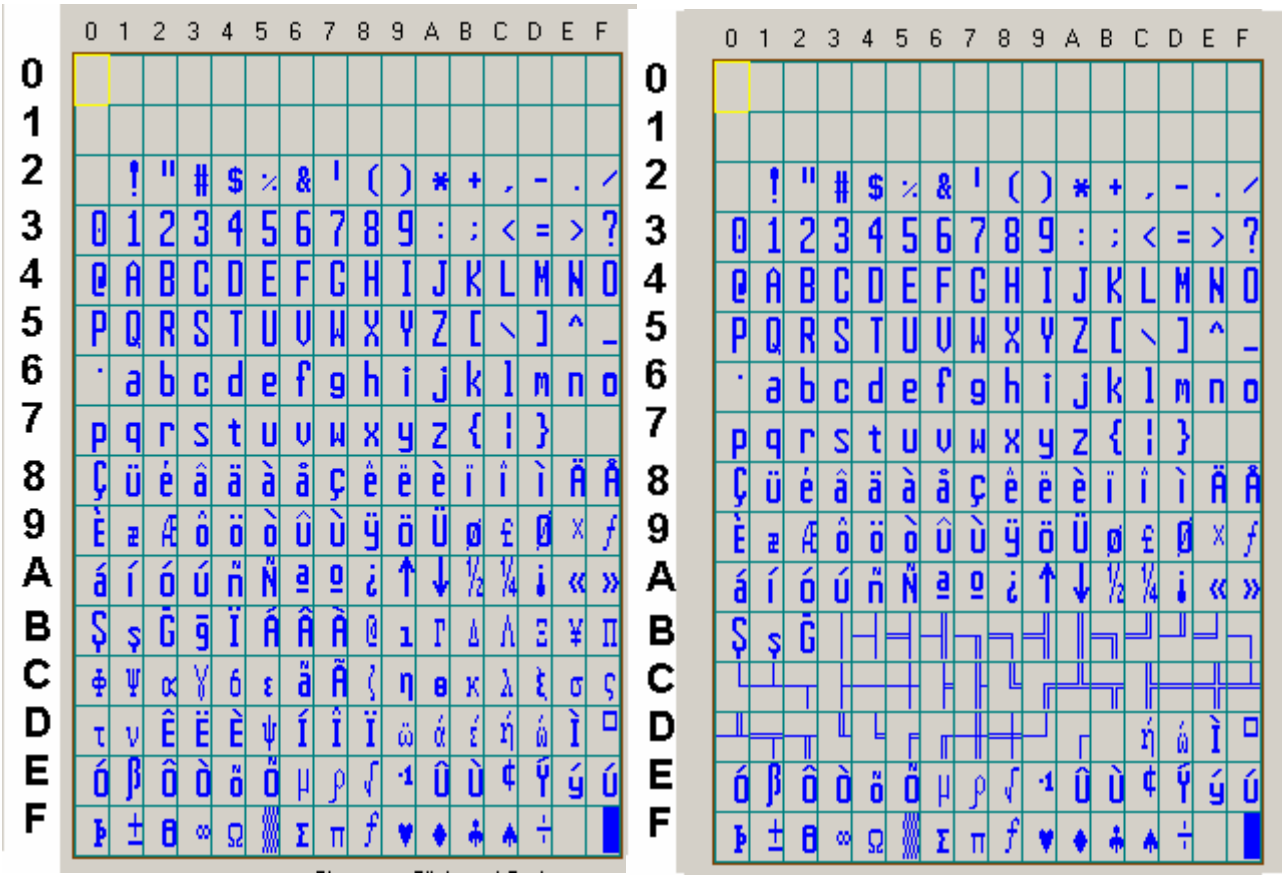
Listed below are the fonts installed and the three character command string to select them.

FONT NAME	PITCH	CHARACTER SIZE (WxH)	SOFTWARE COMMAND	DOWNLOADABLE	SUPPORTED PRINTERS
Monospace 821BT	20CPI Short Font	10x16	ESC+'k'+'9'	NO	4500THS
Monospace 821BT	20CPI Bold	10x23	ESC+'k'+'8'	NO	4500THS
Monospace 821BT	20CPI Normal	10x23	ESC+'k'+'7'	NO	4500THS
Monospace 821BT	10 CPI Normal	20x23	ESC+'k'+'6'	NO	4500THS
Courier Mode 5	24 CPI normal	8x23	ESC+'k'+'5'	YES	All Thermal Printers
Courier Mode 4	21 CPI normal	9x23	ESC+'k'+'4'	YES	All Thermal Printers
Courier Mode 3	19 CPI normal	10x23	ESC+'k'+'3'	YES	All Thermal Printers
Courier Mode 2	16 CPI normal	12x23	ESC+'k'+'2'	YES	All Thermal Printers
Courier Mode 1	12 CPI normal	16x23	ESC+'k'+'1'	YES	All Thermal Printers
Courier Mode 0	13 CPI ***rotated***	*14x16*	*ESC+'k'+'0'*	NO	All Thermal Printers

Installed Fonts

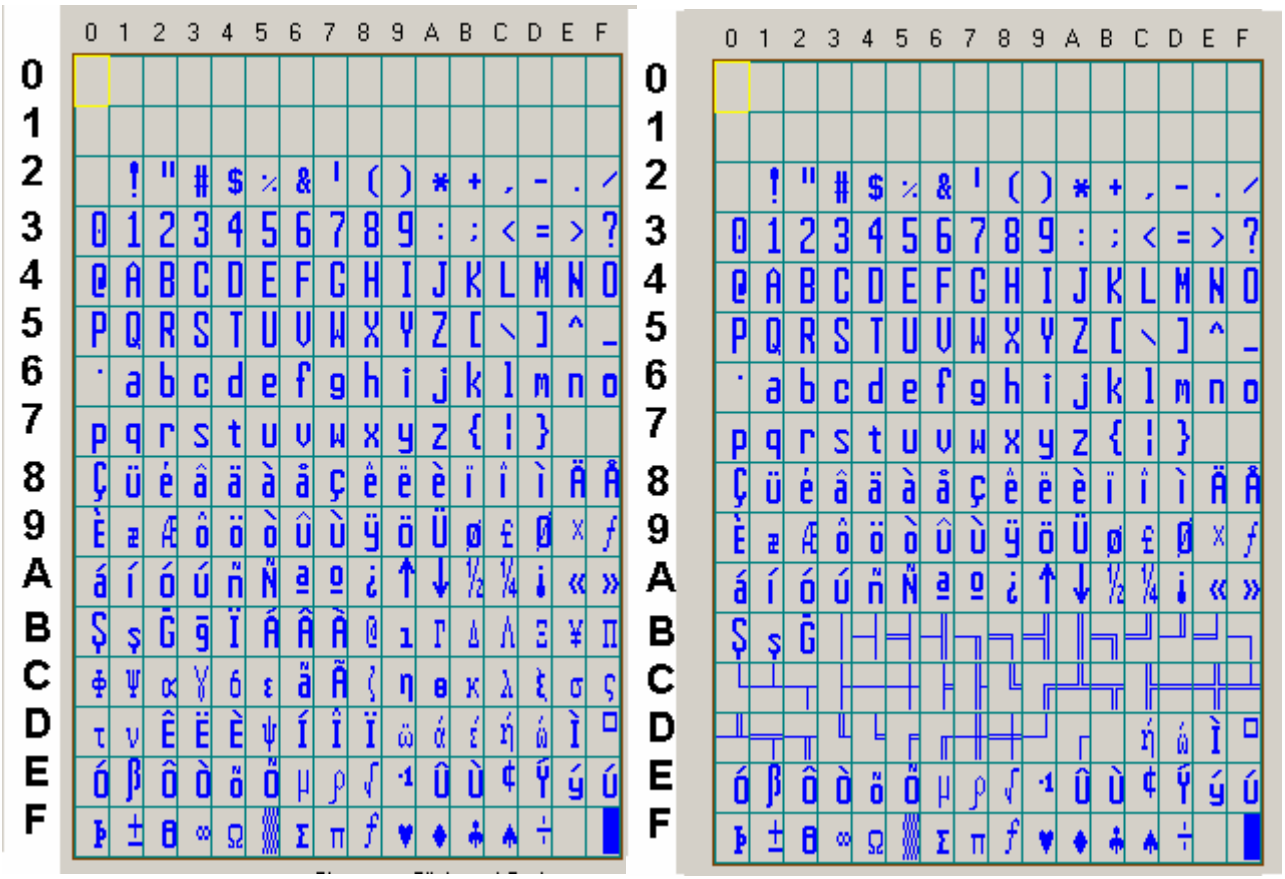
Note: Default printer settings are set to the 80 column font.

Default Font (08w x 23h)



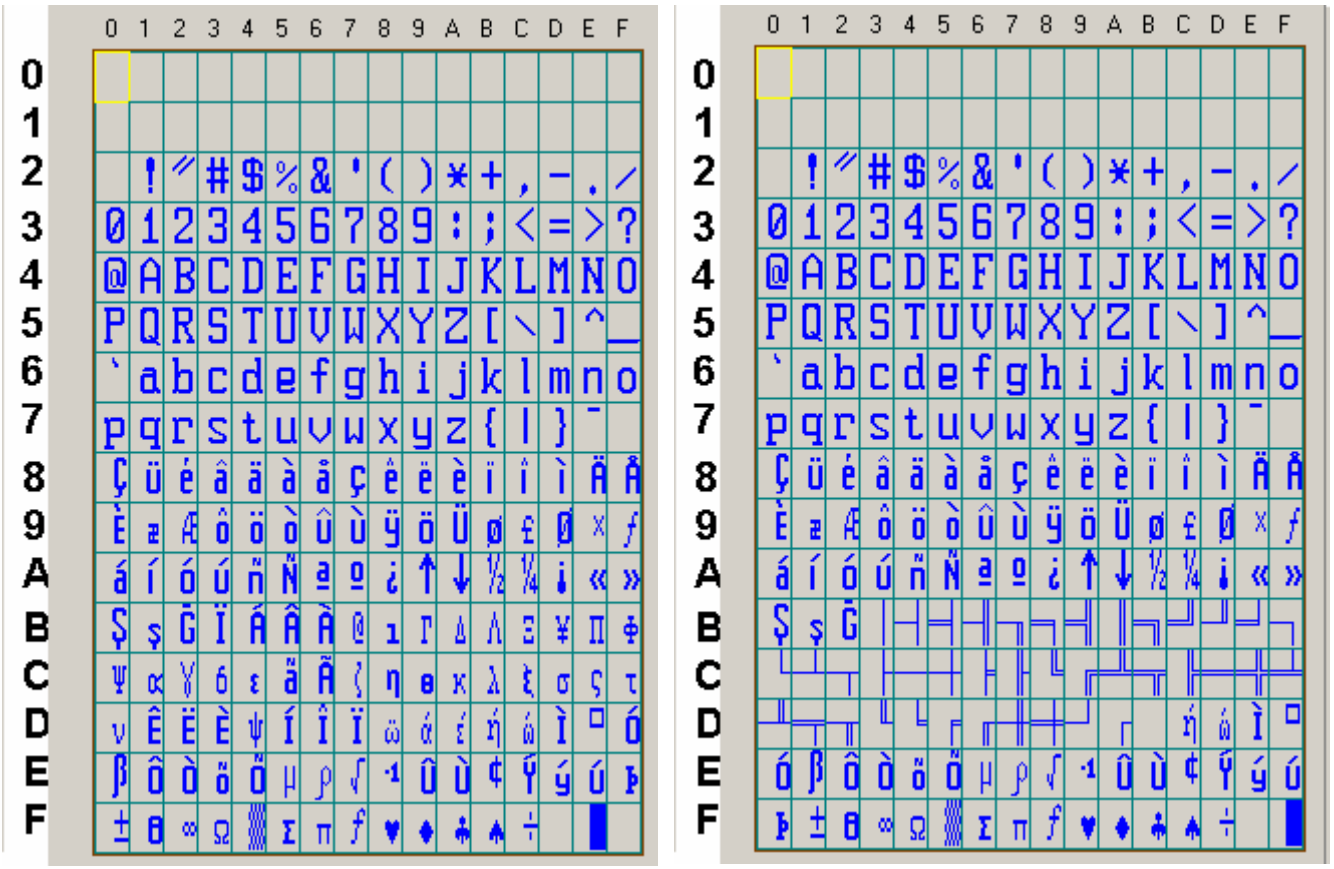
Default International and PC Line Graphic Font (08x23)

Default Font (10w x 23h)



Default International and PC Line Graphic Font (10w x 23h)

Default Font (12w x 23h)



Default International and PC Line Graphic Font (12w x 23h)

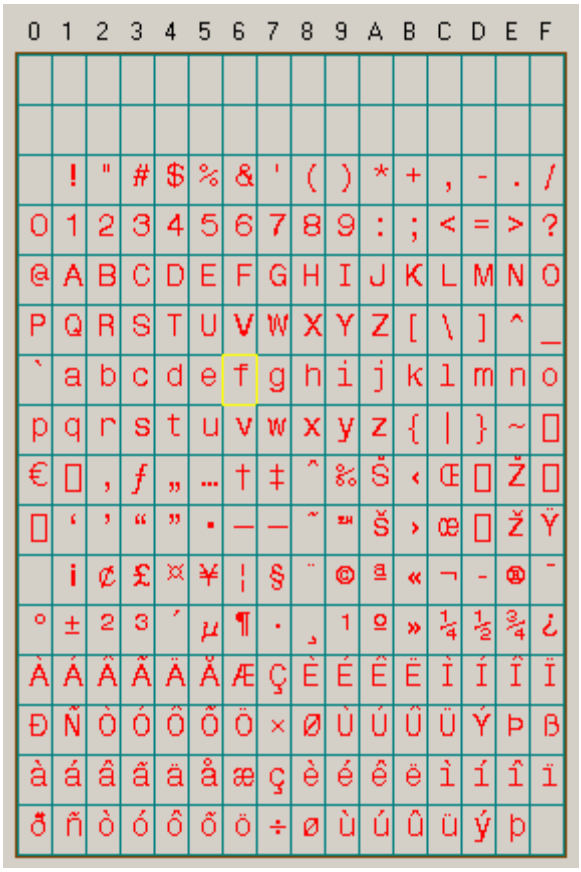
7.10 Monospace 821 BT 20x23(4500THS Only)

Selected by Esc k 6

Monospace 821 BT 20x23(4500THS Only)

7.11 Monospace 821 BT 10x23 (4500THS Only)

Selected by Esc k 7



Monospace 821 BT 10x23(4500THS Only)

7.12 Monospace 821 BT 10x23 Bold (4500THS Only)

Selected by Esc k 8

Monospace 821 BT Bold 10x23(4500THS Only)

Bar Codes

The Extech 4500THS printer supports several bar code symbologies. Two commands are defined for printing bar codes.

Bar Code Command Formats	***Printer Action***	***Command String Components***
Esc- 'z'-n1-n2-L-[data]	Prints Bar code only	n 1 bar code type '1' Code 39 '2' Code 128 '3' I 2 of 5 '4' Not Supported right now '5' Codabar n2 number of character bytes in data array 1-255 L Height of bar code printed in increments of 0.125mm
Esc- 'Z'-n1-n2-L-[data]	Prints Bar code and ASCII visible	

Bar Code Command Formats

All barcodes are printed with the minimum bar width ("x-dimension") of 0.250mm, in compliance with the respective official specification.

Code 39 specifications

Description: Each symbol starts with Leading Quiet Zone, followed with Start Symbol, Data Symbols, ending with Stop Symbol and Trailing Quiet Zone.

Character set: 36 alphanumeric (0-9, A-Z) and '-' 'space' '$' '/' '+' '%'

Note: Only *capital* letters are supported.

Elements per symbol: 9 (5 bars, 4 spaces)

Character density: 6.25 CPI

Bar width: 0.25mm (narrow to wide ratio of 1:3).

Characters per line: 9 with auto center (maximum).

Command String	***Printer Output***
Esc-'Z'-'1'-0x07- 0x0a-'CODE-39'	Prints CODE -39, 1mm high

CODE 39 Example

Code 128 specifications

Description: Each symbol starts with Leading Quiet Zone, followed with Start Symbol, Data Symbols, ending with Stop Symbol and Trailing Quiet Zone.
Character set: Support for full 256 ASCII set among three subsets.
Elements per symbol: 6 (3 bars, 3 spaces)
Character density: 9.1 CPI
Bar width: 0.25mm
Characters per line: 13 alphanumeric characters , or 26 numeric only (maximum) - automatically centered.

Code 128 Start character:
<start character> = {0x87, 0x88, 0x89} determines the character set to be printed

Start Character	***Characters Sent to Printer***	***Characters Read by Bar Code Reader***
IF <start character> is 0x87 CODE A	0x020 through 0x03F ASCII (#32 - #63)	0x020 through 0x03F ASCII (#32 - #63)
	0x040 through 0x07F ASCII (#64 - #127)	0x00 through 0x07F ASCII (#0 - #31)
IF <start character> is 0x88 CODE B	0x020 through 0x07F ASCII (#32 - #127)	0x020 through 0x07F ASCII (#32 - #127)
IF <start character> is 0x89 CODE C (Each number must be paired with another)	PAIRS 0x030 through 0x039 ASCII (#48 - #57)	PAIRS 0x030 through 0x039 ASCII (#48 - #57)

Code 128 Start Character

Code 128 Data Bytes:
<DATA>
The data bytes are defined by which character set is defined. The printer accepts all characters 0x20h - 0x7Fh with the translations defined above.

Also, characters 0x080 - 0x86 may be used as code 128 control characters:

HEX	DEC	CODE A	CODE B	CODE C
0x080	128	FNC 3	FNC 3	
0x081	129	FNC 2	FNC 2	
0x082	130	SHIFT	SHIFT	
0x083	131	change to C	change to C	
0x084	132	change to B	FNC 4	change to B
0x085	133	FNC 4	change to A	change to A
0x086	134	FNC 1	FNC 1	FNC 1

Code 128 Data Bytes

FNC 1: reserved CODE 128 character (used for UCC/EAN128)
FNC 2: message append (not supported by *all* bar code readers)
FNC 3: Initialize bar code reader
FNC 4: extend characters (bar code reader reads character + 128)
For example: 'a' is changed from #97 to #97+128 = #225

Notice: It *is* possible to switch code sets in the middle of the bar code. This is useful with heavily numeric alphanumeric bar codes (see example below).

Code 128 EXAMPLES:

Print alphanumeric bar code "A2a", 12.5mm high, with human readable text:

n = 3 printed characters + 1 start character = 4
L = 12.5mm / 0.125mm = #100
start character = START B (full ASCII alpha numeric) = #136

#27	#90	#51	#04	#100	#136	#65	#50	#97
0x1B	0x5A	0x33	0x04	0x64	0x88	0x41	0x32	0x60
ESC	‘Z’	‘2’	0x04	‘d’	0x88	‘A’	‘2’	‘a’

Print all-numeric bar code "1234", 5mm high, without human readable text:

n1 = 4 printed characters + 1 start character = 5
L = 5mm / 0.125mm = #40
start character = START C (numeric pairs) = #137

#27	#122	#50	#05	#40	#137	#49	#50	#51	#52
0x1B	0x7A	0x32	0x05	0x28	0x89	0x31	0x32	0x33	0x34
ESC	‘z’	‘2’	0x05	‘(’	0x89	‘1’	‘2’	‘3’	‘4’

Interleaved 2 of 5 specifications

Description: Each symbol starts with Leading Quiet Zone, followed with Start Symbol, Data Symbols, ending with Stop Symbol and Trailing Quiet Zone.
Character set: numeric pairs.
Elements per symbol: 10 (5 bars, 5 spaces)
Character density: 11.11 CPI
Bar width: 0.25mm
Characters per line: 16 numeric (maximum), automatically centered.
Example:

Command String	***Printer Output***
Esc- 'Z'-'3'- 0x0A – 0x50 – '1234567890'	Prints interleaved 2 of 5 " 12345678" , 10 mm high

Interleaved 2 of 5 - Example

Codabar Specifications

Description: Each symbol starts with Leading Quiet Zone, followed with Start Symbol, Data Symbols, ending with Stop Symbol and Trailing Quiet Zone.
Character set: 0-9, {$, -, :, /, ., +} and start/stop pairs {A/T, B/M, C/*, D/E}
Elements per symbol: 7 (4 bars, 3 spaces)
Character density: 8.1 CPI
Bar width: 0.25mm
Characters per line: 15 (maximum) plus start/stop, automatically centered.

Examples:

Command String	**Printer Output**
Esc-'Z'- '5'-0x0A-0x78- 'A123456T'	Prints Codabar "123456" , 15 mm high using the A start character
Esc-'Z'-'5'-0x06-0x50- 'C2468*'	Prints Codabar "2468" , 10 mm high using the C start character

Codabar Examples

4500THS CONTROL COMMANDS

Character Bold / Emphasized Print Control Commands

Command String	*Action Taken*
Esc – 'U' – '1'	Enable Emphasized print starting with the current text
Esc – 'U' – '0'	Disable Emphasized print starting with the current text

Note: On power up the printer defaults to normal print mode.

Line Spacing Commands

To set the line spacing between successive printed text lines and the number of line feeds desired at the beginning of a line , use the three character commands from the table below. It is important to mention that while printing PC Line-Draw characters , the line spacing must be set to zero, thus allowing graphic characters on successive lines to be connected.

Command String	*Command Description*
Esc – 'a' - n	Where n is the number of graphic-line-spacing, in increments of 0.125 mm. n = { 0..10}
Esc – 'J'-n	Where n is the number of desired 0.125mm graphic line feeds n = {0..255}.

Character Line Spacing

Note: Printer default setting is 3-dot line spacing after each printed text line. Please note that when a character has the '' around it , this means that it has to be types exactly as shown. On the other hand characters that don't have the '' around it like the "n" in the example above have to be entered while the Alt key on the keyboard is being held.

Character Height Control Commands

A single byte control command is defined to control the printed character height. Normal height of a character is 23 . EXTEND control character (^ \)selects a double height which is equal to 46 . EXTEND OFF control character (^])selects a normal height. The command is applied to all the characters on a line following the control character.

Character	*Control*	*Hex/Dec*	*Control Action*
EXTEND	^\	0x1C/28	Extended Print ***All characters following this command are printed double high***.
EXTEND OFF	^]	0x1D/29	Extended Print Off/Normal Print ***All characters following this command are printed normal height***.

Height Control Commands

Note: Default printer settings are set to Normal Print.

Character Width Control Commands

A single byte control command is defined to control the printed character width.

SO	**^N**	**0x0E / 14**	Shift Out
			Each dot of the Character bit- Map is burned twice
SI	**^O**	**0x0F / 15**	Shift In
			Each dot of the Character bit - Map is burned once

Character width control commands

Note: On power up the printer defaults to a single character width mode.

Reverse Printing Command

The reverse printing command enables the user to print in white letters on a black background. Below are the command structure details.

Command String	*Action Taken*
Esc – 'U' – 'R'	Enable reverse printing starting with the characters following the command. The reverse printing is terminated by the Disable Reverse Command or by cycling the power.
Esc – 'U'- 'n'	Disable reverse printing starting with the characters following the command. The disable reverse printing is terminated by the Enable Reverse Command or by cycling the power.

Note: On power up the printer defaults to normal printing mode.

<u>Underline Command</u>

The underline command allows the user to underline the desired portion of the text on a specific line or the entire line if desired. Below are the command structure details.

Command String	***Action Taken***
Esc – 'U' – 'U'	All characters following this command will be underlined. The underline command is terminated either by the Esc U n command or by cycling the printer power.
Esc – 'U'- 'u'	All characters following this command will not be underlined.

Note: On power up the printer defaults to non underlined mode.

Paper Out Sensor:

The paper out sensor is located in the center of the print head. If the printer runs out of paper then the printing process stops and the third LED lights up RED. Reload paper, close the paper door and press the FEED button. Printer will feed for a few seconds trying to pick up the speed after which printing continues normally. The data which is still in the buffer will be printed out.

Label and Form Printing With Black Mark Option

The Extech 3750T thermal printer can print on label and preprinted form stocks, with black mark located on the right side of the paper stock. The printer paper out sensor is used to sense the black mark position.

Black Mark Operation

Follow these steps to use the black mark option.

- Set the paper out sensor sensitivity level by issuing **<ESC> <'Q'> <'Q'> <*n*>** command string. The value selected for the sensitivity is dependant upon the height of the pre-printed black mark located on the label or form stock. The default power on value of ***<n>*** is 40d (0x28).
- Issue **<ESC> <'Q'> <'F'> <*m*>** or **<ESC> <'Q'> <'B'> <*m*>** printer Command to find the black mark. The command position's the label or the form for printing.
- Wait for **<ESC> <'Q'> <0x3F> <0x3F>** <***n1***> <***n2***> black mark found response from the printer.
- Send the data to be printed.

Black Mark Printer Commands

Black Mark Command	Command String	Description
Reverse Dot Feed	**<ESC> <'Q'> <'J'> <*n*>**	Perform ***<n>*** reverse dot line feeds, 0.125mm each.
Out of Paper Sensitivity	**<ESC> <'Q'> <'Q'> <*n*>**	On paper detect fail, postpone the paper out error response for <***n***> 0.125mm dot lines before flagging a paper out error.
Forward Black Mark Seek	**<ESC> <'Q'> <'F'> <*m*>**	Seek black mark using forward feed until <***m***> dot line feeds have been processed, each dot line feed 0.250mm.
Reverse Black Mark Seek	**<ESC> <'Q'> <'B'> <*m*>**	Seek black mark using backward feed until <***m***> dot line feeds have been processed, each dot line feed 0.250mm.
Printer Black Mark Response: **Paper Found**	**<ESC> <'Q'> <0x3F> <0x3F> <*n1*> <*n2*>**	***n1*** and ***n2*** are the high and the low nibble, respectively, describing how many (0.25mm) dot lines were required to find black mark. The low nibbles of these two bytes make up the one byte which shows how many lines were processed.
Printer Black Mark Response: **Paper Not Found**	**<ESC> <'Q'> <0x30> <0x30> <*n1*> <*n2*>**	***n1*** and ***n2*** are the high and the low nibble, respectively, describing how many (0.25mm) dot lines were processed before reporting black mark status. The low nibbles of these two bytes make up the one byte which shows how many lines were processed.
Notes:		

<**n>** Total number of 0.125mm dot lines, 0x00 through 0xFF. ***<m>*** Total number of 0.250mm dot lines, 0x00 through 0XFF. ***n1*** and ***n2*** The total number of 0.125mm dot lines processed, while seeking the black mark. ***n1*** holds the high four bits (0x30 + 4 high bits). ***n2*** holds the low four bits (0x30 + 4 low bits). ***n1*** and ***n2*** can have values 0x30 through 0x3f.

Table 6.0 – Black Mark Printer Cmmands